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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,598	08/13/2001	Marc Bolduc	G&C 30566.197-US-01	7530

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EXAMINER

COFFY, EMMANUEL

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,598

Applicant(s)

BOLDUC ET AL.

Examiner

Emmanuel Coffy

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This action is responsive to the amendment filed on April 5th, 2005. Claims 1- 30 are pending and claims 1, 8, 11, 18, 21 and 28 are amended. They represent an Apparatus, Method and Data Structure for "Displaying Image Data."

Response to Arguments

2. Applicant's arguments filed on April 5th have been fully considered but they are not persuasive. In response to Applicant's arguments, 37 CFR § 1.111(c) requires applicant to "clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections." On paragraph 2 of the remarks, applicant stated that; "these amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art." Such statements are clear indication that applicant did not endeavor to amend the claims so to avoid such references or objections.

2.1 On page 12, paragraph F of the remarks applicant state: "Specifically, with regard to claims 1, 11 and 21, none of the above references teach or suggest displaying selected frames from said frame source, on said display means, at their due time in order to maintain timing integrity of the clip. Moreover, none of the above references teach or suggest performing such a function while skipping frames in said frame sequence in response to an indication of the data transfer rate of said network."

Applicant is directed to Aharoni et al. (6,014,694) col. 4, lines 35-58, col. 6, lines 35-39

and lines 46-50 where these limitations are clearly taught. In col. 6, lines 35-39 and lines 46-50 Aharoni discloses:

The present invention is a system for adaptively transporting video and audio over networks wherein the available bandwidth varies with time.
The video compression/file generator **14** in combination with the video client **22** comprise a video/audio codec or coder/decoder that functions to compress, code, decode and decompress video streams that are transmitted over the network **20** into a compressed video and audio file.

This is interpreted to mean that Aharoni suggests "skipping frames in said frame sequence in response to an indication of the data transfer rate of said network" and "selecting a next frame for preloading by skipping at least one frame in the clip's frame sequence." In file compression, frames are skipped based on some protocol. In essence, this limitation does not recite anything novel over the prior art.

Applicant is advised that the entire art is applied to the application at bar rather than specific cited paragraphs.

2.2 Piecemeal Analysis of references.

Applicant argues that Sen merely describes a method of multicasting video to multiple client nodes via intermediate nodes that includes smoothed transmission schedules, Aharoni merely describes adaptively transporting video over networks where the available bandwidth varies with time, Hazra merely describes providing a picture-in-picture (PIP) display for streaming digital video, and Tremblay merely describes a multi-ported register file. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the rejection is sustained.

3. The dependent and non-amended claims stand rejected as articulated in the First Office Action and all objections not addressed in Applicant's response are herein reiterated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 4-9, 11-12, 14-19, 21-22, 24-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691,312) in view of Aharoni et al. (US 6,014,694).

Sen substantially teaches the invention as claimed including a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claim 1, Sen substantially teaches the method of claim 1 including viewing image data comprising: (See Fig. 1)

(a) display means; (See Fig. 1 (102))

(b) network connecting means for transferring frames of said image data over a network from a remotely connected frame source, wherein: (Fig. 1 (108a, 108b, 108c))

(i) said image data comprises a plurality of image frames and has a frame rate from which may be inferred a due time for display of each frame in a sequence of frames in said image data; (See *Fig. 4, Fig. 5, Fig. 6*)

Sen does not expressly disclose a frame source which returns a frame in response to a frame request issued over said network nor does it suggest processing means configured to play a clip. However, Aharoni teaches that the function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Aharoni further discloses:

(i) displaying selected frames from said frame source, on said display means, at their due time in order to maintain timing integrity of the clip; and (See col. 8, lines 24-41).

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network. (See col. 12, lines 47-51).

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 2 and 22:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information

descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose an indication of the data transfer rate provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display. However, Aharoni expressly teaches comparing the sending rate to the receiving rate at col. 4, lines 31-34.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 4, 14 and 24:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose frames that are skipped in response to a prediction of a network data transfer rate.

However, Aharoni expressly teaches skipping frames in response to measured bandwidth of the channel at col. 12, lines 47-51 and col. 4, lines 46-55.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by

Sen with skipping frames in response to measured bandwidth of the channel as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 5, 15 and 25:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose frames that are prefetched into a frame queue prior to their due time.

However, Aharoni expressly discloses prefetching frames into frame queue at col. 2, line 66- col. 3, line 8 and col. 12, lines 42-47.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with prefetching frames into frame queue as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally. Therefore, claim 5 is rejected.

Claims 6, 16 and 26:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose a frame skip rate which is defined by a user.

However, Aharoni expressly discloses accessing rate constraints of nodes in the distribution tree at col. 1, line 65 - col. 3, line 12.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with accessing rate constraints of nodes as disclosed by Aharoni. This system is preferable in that it provides for custom frame skip rate.

Claims 7, 17 and 27:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose a frame selection for display by processing its due time with elapsed real time since playback started.

However, Aharoni expressly discloses packet selection for display at col. 16, lines 24 – 29 and col. 8, lines 25-41.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with packet selection for display as disclosed by Aharoni. This system is preferable in that the sender constantly tries to utilize the available bandwidth as efficiently as possible by keeping the network pipe full.

Claims 8 and 18:

Sen teaches apparatus for displaying image data, comprising: (See Fig. 1)

(a) image data comprising a plurality of image frames, sequences of said frames being organised into clips, each clip having a frame rate, and each frame in a clip thereby having a due time for display with respect to a start time for playing the clip;

(b) display means; (See Fig. 1 (102))

(c) memory means; (See Fig. 1)

(d) network connecting means for enabling transfer of image data over a network from a frame source remotely connected to said network; and (See Fig. 1 (108a, 108b, 108c)).

(e) processing means configured to perform operations to play a clip from said frame source by: (See Fig. 1)

(i) selecting a next frame for preloading by skipping at least one frame in the clip's frame sequence; (ii) preloading a frame from said frame source into a frame queue in said memory means; (iii) displaying a preloaded frame at its due time in order to maintain timing integrity of the clip; (iv) processing elapsed real time since the clip started playing with a frame timing parameter; and (v) updating the number of frames to skip in response to said processing of elapsed real time.

Sen does not expressly disclose a frame source which returns a frame in response to a frame request issued over said network nor does it suggest processing means configured to play a clip. However, Aharoni teaches that the function of the video

server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Aharoni further discloses:

(i) displaying selected frames from said frame source, on said display means, at their due time; and (See col. 8, lines 24-41).

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network. (See col. 12, lines 47-51).

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 9, 19 and 29:

Sen teaches apparatus according to claim 8, wherein said frame timing parameter is the due time for a frame.

Sen does not expressly disclose a frame timing parameter. However, Aharoni teaches displaying selected frames from said frame source, on said display means, at their due time; and (See col. 8, lines 24-41).

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 11 and 21:

Sen teaches a method of displaying image data on an image viewing station, wherein: (a) the image viewing station comprises display means, processing means, and network connecting means for transferring frames of said image data over a network from a remotely connected frame source; (b) said image data comprises a plurality of image frames, and has a frame rate from which may be inferred a due time for display of each frame in a sequence of frames in said image data; (c) said frame source returns a frame in response to a frame request issued over said network; and (d) said processing means is configured to play a clip in which said method comprises: (i) displaying selected frames from said frame source, on said display means, at their due time in order to maintain timing integrity of the clip; and (ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network.

Sen does not expressly disclose a frame source which returns a frame in response to a frame request issued over said network nor does it suggest processing means configured to play a clip. However, Aharoni teaches that the function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Aharoni further discloses:

(i) displaying selected frames from said frame source, on said display means, at their due time; and (See col. 8, lines 24-41).

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network. (See col. 12, lines 47-51).

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

Claim 12:

Sen teaches a method according to claim 11, wherein said indication of the data transfer rate is provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display.

Sen fails to disclose an indication of the data transfer rate provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display. However, Aharoni expressly teaches comparing the sending rate to the receiving rate at col. 4, lines 31-34.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of transporting video over any network generally.

6. Claims 3, 13 and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691,312) in view of Hazra (US 6,510,553.)

Sen substantially teaches the invention as claimed including a method of multicasting video to multiple client nodes via intermediate nodes that includes

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accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claim 3, Sen fails to disclose means for storing pre-rendered image frames. However, Hazra expressly discloses means for storing rendered image at col. 11, lines 1 – 9 and 20-24.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with means for storing rendered image as disclosed by Hazra. This system is preferable in that the quality of the streaming video is not a function of the available bandwidth.

7. Claims 10, 20 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691,312) in view of Tremblay et al. (US 6,343,348.)

Sen teaches the invention as claimed including a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claims 10, 20 and 30, Sen fails to disclose processing instructions executed as multiple threads.

However, Tremblay expressly discloses processing instructions executed as multiple threads at col. 5, lines 38 – 44.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by

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Sen with processing means executed as multiple threads as disclosed by Tremblay.

This system is preferable in that the quality of the streaming video is not a function of the available bandwidth.

8. THIS ACTION IS MADE FINAL.

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Coffy whose telephone number is (571) 272-3997. The examiner can normally be reached on 8:30 - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Coffy
Patent Examiner
Art Unit 2157

***EC

June 13, 2005


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